

पुस्तिका में पृष्ठों की संख्या-32
No. of Pages in Booklet -32
पुस्तिका में प्रश्नों की संख्या-180
No. of Questions in Booklet -180

SSAP-22

रिंक
11/5/22

2400061

प्रश्न पुस्तिका संख्या /
Question Booklet No.

Paper Code : 14
SUBJECT : Neuro Surgery
(Super Speciality)

समय : 3.00 घण्टे
Time: 3.00 Hours

अधिकतम अंक : 180
Maximum Marks: 180

प्रश्न-पत्र पुस्तिका के पेपर सील/ पॉलिथिन बैग को खोलने पर परीक्षार्थी यह सुनिश्चित कर लें कि प्रश्न पुस्तिका संख्या तथा ओ.एम.आर उत्तर-पत्रक पर अंकित बारकोड समान हैं। इसमें कोई भिन्नता हो तो परीक्षार्थी वीक्षक से दूसरा प्रश्न-पत्र प्राप्त कर लें। ऐसा सुनिश्चित करने की जिम्मेदारी अभ्यर्थी की होगी।

On opening the paper seal /polythene bag of the Question Booklet the candidate should ensure that Question Booklet Number and Barcode of OMR Answer Sheet must be same. If there is any difference, candidate must obtain another Question Booklet from Invigilator. Candidate himself shall be responsible for ensuring this.

परीक्षार्थियों के लिए निर्देश

1. सभी प्रश्नों के उत्तर दीजिए।
2. सभी प्रश्नों के अंक समान हैं।
3. प्रत्येक प्रश्न का केवल एक ही उत्तर दीजिए।
4. एक से अधिक उत्तर देने की दशा में प्रश्न के उत्तर को गलत माना जाएगा।
5. प्रत्येक प्रश्न के चार वैकल्पिक उत्तर दिये गये हैं, जिन्हें क्रमशः 1, 2, 3, 4 अंकित किया गया है। अभ्यर्थी को सही उत्तर निर्दिष्ट करते हुए उनमें से केवल एक गोले अथवा बबल को उत्तर-पत्रक पर नीले बॉल प्वाँट पेन से गहरा करना है।
6. **OMR** उत्तर-पत्रक इस परीक्षा पुस्तिका के अन्दर रखा है। जब आपको परीक्षा पुस्तिका खोलने को कहा जाए, तो उत्तर-पत्रक निकाल कर ध्यान से केवल नीले बॉल प्वाँट पेन से विवरण भरें।
7. प्रत्येक गलत उत्तर के लिए प्रश्न अंक का 1/3 भाग काटा जायेगा। गलत उत्तर से तात्पर्य अशुद्ध उत्तर अथवा किसी भी प्रश्न के एक से अधिक उत्तर से है। किसी भी प्रश्न से संबंधित गोले या बबल को खाली छोड़ना गलत उत्तर नहीं माना जायेगा।
8. मोबाइल फोन अथवा इलेक्ट्रॉनिक यंत्र का परीक्षा हॉल में प्रयोग पूर्णतया वर्जित है। यदि किसी अभ्यर्थी के पास ऐसी कोई वर्जित सामग्री मिलती है, तो उसके विरुद्ध आयोग द्वारा नियमानुसार कार्यवाही की जायेगी।
9. कृपया अपना रोल नम्बर ओ.एम.आर. पत्रक पर सावधानीपूर्वक सही भरें। गलत अथवा अपूर्ण रोल नम्बर भरने पर 5 अंक कुल प्राप्तांकों में से काटे जा सकते हैं।
10. यदि किसी प्रश्न में किसी प्रकार की कोई मुद्रण या तथ्यात्मक प्रकार की त्रुटि हो, तो प्रश्न के हिन्दी तथा अंग्रेजी रूपान्तरों में से अंग्रेजी रूपान्तर मान्य होगा।

चेतावनी : अगर कोई अभ्यर्थी नकल करते पकड़ा जाता है या उसके पास से कोई अनधिकृत सामग्री पाई जाती है, तो उस अभ्यर्थी के विरुद्ध पुलिस में प्राथमिकी दर्ज कराते हुए विविध नियमों-प्रावधानों के तहत कार्यवाही की जाएगी। साथ ही विभाग ऐसे अभ्यर्थी को भविष्य में होने वाली विभाग की समस्त परीक्षाओं से विवर्जित कर सकता है।

INSTRUCTIONS FOR CANDIDATES

1. Answer all questions.
2. All questions carry equal marks.
3. Only one answer is to be given for each question.
4. If more than one answers are marked, it would be treated as wrong answer.
5. Each question has four alternative responses marked serially as 1, 2, 3, 4. You have to darken only one circle or bubble indicating the correct answer on the Answer Sheet using **BLUE BALL POINT PEN**.
6. The **OMR** Answer Sheet is inside this Test Booklet. When you are directed to open the Test Booklet, take out the Answer Sheet and fill in the particulars carefully with **blue ball point pen** only.
7. **1/3 part of the mark(s) of each question will be deducted for each wrong answer.** A wrong answer means an incorrect answer or more than one answers for any question. Leaving all the relevant circles or bubbles of any question blank will not be considered as wrong answer.
8. Mobile Phone or any other electronic gadget in the examination hall is strictly prohibited. A candidate found with any of such objectionable material with him/her will be strictly dealt as per rules.
9. Please correctly fill your Roll Number in O.M.R. Sheet. **5 Marks** can be deducted for filling wrong or incomplete Roll Number.
10. If there is any sort of ambiguity/mistake either of printing or factual nature, then out of Hindi and English Version of the question, the English Version will be treated as standard.

Warning : If a candidate is found copying or if any unauthorized material is found in his/her possession, F.I.R. would be lodged against him/her in the Police Station and he/she would liable to be prosecuted. Department may also debar him/her permanently from all future examinations.

इस परीक्षा पुस्तिका को तब तक न खोलें जब तक कहा न जाए।

Do not open this Test Booklet until you are asked to do so.

NEURO-SURGERY

1. Among the surgeons who was first to treat cerebral aneurysms surgically by obliterating them through the use of snare ligatures or metal clips?
- (1) Dorcas H. Padget (2) Walter Dandy
(3) Moses Allen Starr (4) Charles H. Frazier
2. Wilhelm Rontgen (1845-1923) considered the father of diagnostic radiology was a german -
- (1) Neurosurgeon (2) Radiologist
(3) Mechanical Engineer (4) Electrical Engineer
3. First EC-IC (External Carotid-Internal Carotid) bypass procedure in human was done by -
- (1) Charles Frazier (2) William Macewen
(3) M. Gazi Yasargil (4) C.G. Drake
4. PET scan was developed by -
- (1) Phelps et al (2) Numoto
(3) Spiegel and Wycis (4) Ernst von Bergmann
5. First successful cerebral angiography was performed by -
- (1) Egas Moniz (2) Harvey Cushing
(3) Victor Horsley (4) Irving Cooper
6. A lesion of the medial aspect of the lateral white column of the spinal cord is most likely to cause deficits in -
- (1) discriminative touch and proprioception on the ipsilateral side
(2) pain and temperature sensations on the contralateral side
(3) pain and temperature sensation on the ipsilateral side
(4) voluntary movement on the ipsilateral side
7. High Steppage Gait is present in -
- (1) Diabetic neuropathy
(2) Common peroneal nerve palsy
(3) Progressive spinal atrophy
(4) All of the above

8. Which statement is false about Apraxia?
- (1) Apraxia can affect common learned action
 - (2) Language apraxia implies a left hemispheric lesion
 - (3) Lesion of cortex and thalamocortical circuit can cause apraxia
 - (4) Dyslexia is a form of aphasia apraxia
9. Loss of corneal reflex is seen in all, except -
- (1) Cerebellopontine angle tumor
 - (2) Caudal 1/3 of spinal trigeminal tract lesion
 - (3) Rostral 2/3 of spinal trigeminal tract lesion
 - (4) Carotid aneurysm
10. Which statement about the oculomotor nerve is correct?
- (1) It exits the brainstem in the rostral pons
 - (2) It has both somatic motor and parasympathetic components
 - (3) It has its cell bodies in the lateral part of the midbrain
 - (4) It innervates the superior oblique muscle of the eye
11. Traube Hering waves are -
- (1) Lundberg type A wave
 - (2) Lundberg type B wave
 - (3) Lundberg type C wave
 - (4) None of the above
12. The best view to demonstrate cervical articular masses is -
- | | |
|--------------------|-------------------------|
| (1) Towne's view | (2) Caldwell-Luc's view |
| (3) Swimmer's view | (4) Pillar's view |
13. J-shaped sella is seen in -
- | | |
|--------------------------|-----------------------|
| (1) Empty sella syndrome | (2) Hurler syndrome |
| (3) Craniopharyngioma | (4) Pituitary adenoma |

14. Causes of Hyperintensity on MRI T1W1 are -
- (1) Very high protein content
 - (2) Melanin
 - (3) Hypercellularity with low cytoplasm is seen in medulloblastoma
 - (4) Edema
15. Which stage of sleep is prominent on EEG at the onset of narcoleptic sleep attacks?
- (1) Stage 1
 - (2) Stage 2
 - (3) Stage 3
 - (4) REM
16. Understanding the circulation of the cerebrospinal fluid is critical for the ability to diagnose disorders where circulation is abnormal and for the ability to take samples of CSF for analysis. Which statement concerning spinal meninges and cerebrospinal fluid is correct?
- (1) CSF travels in the subarachnoid space
 - (2) CSF is typically sampled from the epidural space
 - (3) The dural sac that surrounds the spinal cord ends at the L1-L2 vertebral level
 - (4) The pia mater adheres tightly to the arachnoid mater
17. "Insensitive space" as related to myelography -
- (1) L3 - L4
 - (2) L4 - L5
 - (3) L5 - S1
 - (4) All of the above
18. Biochemical defect present in the majority of brain tumor measured by magnetic resonance spectroscopy -
- (1) Decreased Lactate
 - (2) Decreased Lipid
 - (3) Decreased NAA
 - (4) Decreased Choline
19. Radiation level CT scan per examination is -
- (1) 3 - 5 cGy
 - (2) 5 - 10 cGy
 - (3) 10 - 15 cGy
 - (4) 15 - 20 cGy

20. The most sensitive non-invasive monitor of venous air embolism is -
- (1) Auscultation of the chest with a stethoscope
 - (2) End-tidal pCO₂
 - (3) End-tidal pN₂
 - (4) Precordial Doppler
21. CSF production is increased by which drug?
- (1) Isoflurane
 - (2) Enflurane
 - (3) Sevoflurane
 - (4) Ketamine
22. Factors that lower the seizure threshold -
- (1) sleep deprivation
 - (2) alkalosis
 - (3) cerebral ischemia
 - (4) All of the above
23. How long after a stroke should surgery be deferred for an elective surgical procedure?
- (1) 1 week
 - (2) 6 weeks
 - (3) 6 months
 - (4) 1 year
24. Drugs shown to reduce the risk of osteoporotic fracture are all, except -
- (1) Bisphosphonate
 - (2) Tamoxifen
 - (3) Progesterone
 - (4) Transdermal estrogen
25. All of the following antiepileptic drugs are inducer of liver cytochrome P450 enzyme, except -
- (1) Primidone
 - (2) Carbamazepine
 - (3) Phenytoin
 - (4) Lamotrigine
26. Which one of the following statements regarding neuroendoscopy is least accurate?
- (1) Image guidance system are not currently compatible with neuroendoscopes.
 - (2) Generally do not provide stereoscopic vision.
 - (3) Single anatomic corridor can result in instrument clashing.
 - (4) Usually requires an assistant to hold scope if the primary surgeon wishes to bimanually manipulate a lesion.

27. Which approach is favoured for a patient with a 6 mm acoustic neuroma in which hearing preservation is a goal?
- (1) Suboccipital
 - (2) Translabyrinthine
 - (3) Middle fossa
 - (4) None of the above
28. During endoscopic third ventriculostomy, stoma is made in -
- (1) Lateral wall
 - (2) Anterior wall of the third ventricle
 - (3) Roof of the third ventricle
 - (4) Pre-mammillary membrane
29. Popen approach for surgery of pineal tumor is -
- (1) Infratentorial supracerebellar approach
 - (2) Paramedian transtentorial approach
 - (3) Occipital transtentorial approach
 - (4) Transventricular approach
30. What is the likely pathology depicted in the following image?



- (1) Dural AVM
- (2) Moyamoya disease
- (3) Sagittal sinus thrombosis
- (4) Vein of Galen malformation

31. Which one of the following dural sealants is made from human fibrinogen and thrombin only?
- (1) DuraSeal (Confluent Surgical Inc., Waltham, MA, USA)
 - (2) Bioglue (Cryolife, Kennesaw, GA, USA)
 - (3) Tisseel (Baxter International Inc., West-lake Village, CA, USA)
 - (4) Evicel (Johnson & Johnson Wound Management, Ethicon Inc., Somerville, NJ, USA)
32. You use a 2-0 coated vicryl suture to close the galea during closure of a craniotomy. Which one of the following statement is correct?
- (1) It is a synthetic, braided absorbable suture
 - (2) It is a synthetic, braided non-absorbable suture
 - (3) It is a synthetic, monofilament absorbable suture
 - (4) It is a synthetic, monofilament non-absorbable suture
33. A 29-year-old is assaulted and is GCS E3V4M5 at the scene. On examination there is significant bruising to the right side of his head with a 5-cm laceration and does not appear to have any focal neurological deficit. He is awaiting a CT scan when you are told he is less responsive. On examination, he is GCS E2V3M4, his right pupil is dilated and on application of painful stimulus appears to only to be moving his left side. Which one of the following is most likely to be responsible for these findings?
- (1) Transalar (transsphenoidal) herniation
 - (2) Unilateral uncal herniation
 - (3) Ascending transtentorial herniation
 - (4) Tonsillar herniation through the foramen magnum
34. Which one of the following statement regarding decompressive craniectomies is least accurate?
- (1) DECRA trial has shown the utility of early decompressive craniectomy in neuroprotection.
 - (2) DECRA trial utilized decompressive craniectomy at tier 2 management of ICP.
 - (3) Primary decompressive craniectomy is usually performed during evacuation of an acute subdural hematoma due to concerns regarding brain swelling.
 - (4) Secondary decompressive craniectomy is usually undertaken as a last tier therapy when a patient has intractable intracranial hypertension.

35. Surgical approach for thoracic disc herniation is associated with maximal neurologic injury -
- (1) costotransversectomy
 - (2) midline laminectomy
 - (3) transpedicular
 - (4) transthoracic
36. Among all the factors in GCS the most prognostic is -
- (1) verbal response
 - (2) motor response
 - (3) eye opening
 - (4) All of the above
37. A patient is having Diffuse Axonal Injury (DAI), histologically there are axonal swelling (retraction ball) in cerebral white mater, corpus callosum, dorsolateral quadrant upper brainstem and superior cerebellar peduncle and a focal lesion in the corpus callosum. He is having -
- (1) Grade I DAI
 - (2) Grade II DAI
 - (3) Grade III DAI
 - (4) None of the above
38. Type II odontoid fracture is -
- (1) Fracture of tip
 - (2) Fracture of base of neck
 - (3) Fracture of body
 - (4) Fracture of arch
39. Brown-Sequard syndrome is most common due to -
- (1) Intramedullary tumor
 - (2) Intradural extramedullary tumor
 - (3) Extramedullary tumor
 - (4) None of the above
40. Among which of the following incomplete spinal cord injury has the best prognosis -
- (1) Anterior cord syndrome
 - (2) Posterior cord syndrome
 - (3) Central cord syndrome
 - (4) Brown-Sequard syndrome

41. Head trauma result in all, except -
- (1) \uparrow extracellular K^+
 - (2) \uparrow intracellular Ca^{++}
 - (3) \downarrow adenosine
 - (4) \downarrow glutamine intracellularly
42. Following are indicated in brain edema of head injury, except -
- (1) Mild hypothermia
 - (2) Barbiturate
 - (3) Phencyclidine
 - (4) Selenium
43. Which one of the following AP diameters of a decompressive hemicraniectomy flap is the minimum size thought to prevent local complications relating to brain herniation?
- | | |
|-----------|-----------|
| (1) 10 cm | (2) 12 cm |
| (3) 14 cm | (4) 16 cm |
44. About Post-traumatic Epilepsy (PE) all are true, except -
- (1) Seizure presenting after 24 hrs is more common than within 24 hrs
 - (2) AED do not reduce the frequency of late PE but have effect on early PE
 - (3) Cerebral contusion, penetrating SDH injury, depressed fracture have more incidence of late PE
 - (4) Hereditary factor probably does not play any role in PE
45. A 78-year-old man with ankylosing spondylitis sustains a minor fall. Shortly afterwards he experiences sudden worsening of his chronic back pain and is brought to the emergency department by his caregiver. Radiographs and a CT scan of the spine do not show a clear fracture. What is the most appropriate next step?
- (1) Nonsteroidal anti-inflammatory drugs
 - (2) MRI of the spine
 - (3) CT myelography
 - (4) Flexion-extension plain films

46. A young man is brought to the emergency department following a motor vehicle accident, initial examination shows motor weakness (spinal shock) in the myotomes for the leg. A computed tomography scan reveals crushed vertebrae that have lesioned his spinal cord at T8. What are the immediate consequences for the bladder function?
- (1) He will feel when his bladder is full and can then self catheterize
 - (2) He will not be able to store any urine in his bladder
 - (3) He will have reflex bladder function
 - (4) He will have complete urinary retention
47. Not a surgical indication of depressed fracture skull -
- (1) Fracture over dural sinuses
 - (2) Fracture with depression thickness > 10 mm
 - (3) Open depressed fracture
 - (4) Fracture with CSF leak
48. A 23-year-old man is evaluated in the emergency department after a diving accident. Radiographs reveal bilateral jumped facets at C6-7. Examination reveals no motor function below the C7 level. There is some maintained sensation in the lower extremities. What is the patient's current grade on the ASIA (American Spinal Injury Association)?
- (1) ASIA A
 - (2) ASIA B
 - (3) ASIA C
 - (4) ASIA D
49. Kernohan's notch is -
- (1) Hemiparesis ipsilateral to lesion
 - (2) Hemiparesis contralateral to the lesion
 - (3) Monoparesis ipsilateral to lesion
 - (4) Monoparesis contralateral to the lesion
50. Not useful in traumatic brain injury -
- (1) Mannitol
 - (2) Corticosteroids
 - (3) Hyperventilation
 - (4) Furosemide

51. When evaluating a patient with a lumbar burst fracture, the integrity of the posterior ligamentous complex must be evaluated. Which of the following is a complete and accurate list of the components of the posterior ligamentous complex?

- (1) Supraspinous ligament, interspinous ligament, ligamentum flavum and the facet joint capsules
- (2) Supraspinous ligament, interspinous ligament, ligamentum flavum, facet joint capsules and disks
- (3) Supraspinous ligament interspinous ligament and ligamentum flavum
- (4) Supraspinous ligament, interspinous ligament, ligamentum flavum and the facet joints

52. Burst lobe is often referred to as the combination of -

- (1) acute SDH + extensive lobar contusion
- (2) extensive lobar contusion + ICH
- (3) acute SDH + extensive intracerebral hemorrhage
- (4) acute SDH + extensive lobar contusion + intracerebral hemorrhage

53. Head injury is most frequent among which age group in India?

- (1) children more than 5 years
- (2) 20 – 40 years
- (3) 40 – 60 years
- (4) > 60 years

54. Flexion injuries are all, except -

- (1) Wedge compression fracture
- (2) Facet dislocation
- (3) Clay shoveler fracture
- (4) Hangman fracture

55. Which of the following injury patterns is most likely to result from a hyperextension mechanism to the cervical spine?

- (1) Unilateral facet dislocation
- (2) Bilateral facet dislocation
- (3) Quadrangular fracture
- (4) Central cord syndrome

56. A 35-year-old transplant patient develops headache, neck stiffness, photophobia and fever. Cerebrospinal Fluid (CSF) testing with India ink stain reveals a fungal infection. Which one of the following is the cause of this patient's fungal meningitis?
- (1) *Aspergillus b.* (2) *Blastomyces c.*
(3) *Candida* (4) *Cryptococcus*
57. During formation of an abscess capsule, when does necrosis begin?
- (1) Days 1 – 3 (2) Days 4 – 9
(3) Days 10 – 13 (4) Days 14 – 20
58. About cerebral abscess, all statements are true, except -
- (1) Metastatic brain abscess is more common in occipital lobe.
(2) In both developed and developing countries otogenic abscess is the commonest cause.
(3) Cut off margin of the size of abscess above which it should be treated by surgical means is 5 cm.
(4) *H. influenzae* is the most common cause for infection.
59. In neurocysticercosis, true statement is -
- (1) Man is both definitive and secondary host
(2) Pig is definitive host
(3) Dexamethasone can decrease the level of albendazole by 50%
(4) Intraventricular cyst respond to medical therapy
60. Which one of the following antimicrobials is not first line therapy for active *Mycobacterium tuberculosis* infection?
- (1) Ethambutol (2) Isoniazid
(3) Pyrazinamide (4) Streptomycin
61. Not a glial tumor -
- (1) Oligodendroglioma (2) Ganglioglioma
(3) Medulloblastoma (4) GBM

62. A neurofibroma is thought to arise from what structure?
- (1) Epineurium (2) Perineurium
(3) Endoneurium (4) Schwann cell
63. Meningiomas tend to demonstrate what characteristic positivity?
- (1) Vimentin (2) GFAP
(3) Synaptophysin (4) Neurofilament
64. Which one of the following factors is most important in improving length of survival in gliomas?
- (1) 1p/19q codeletion (2) ATRX mutation
(3) EGFR mutation (4) IDH1/2 mutations
65. 10-year-old child presented with Bilateral multiple cranial nerve palsy with Horner syndrome. He has also developed long tract signs but still there was no sign of raised intracranial tension, most likely diagnosis is -
- (1) Cerebellar astrocytoma (2) Ependymoma
(3) Brain stem glioma (4) Medulloblastoma
66. CSF seeding of tumor cells is least seen in -
- (1) Hemangioblastoma (2) Ependymoma
(3) GBM (4) Medulloblastoma
67. Calcification are most commonly seen in -
- (1) Craniopharyngioma (2) Oligodendroglioma
(3) Ependymoma (4) Medulloblastoma
68. Intraventricular tumor are all, except -
- (1) Astrocytoma (2) Ependymoma
(3) Choroid plexus papilloma (4) Hemangioblastoma
69. Hypodense on CT scan are all, except -
- (1) Epidermoid (2) Lipoma
(3) Dermoid (4) Colloid cyst

70. Which type of meningioma is considered a WHO grade III lesion?
- (1) Angiomatous (2) Psammomatous
(3) Rhabdoid (4) Chordoid
71. Foster Kennedy syndrome is due to tumor in -
- (1) superior frontal region (2) inferior frontal region
(3) inferior temporal region (4) inferior occipital region
72. The most common primary PNET responsible for extraneural spread is -
- (1) Medulloblastoma (2) Meningioma
(3) Pinealoblastoma (4) Ependymoma
73. Calcified brain metastasis occur with -
- (1) Bronchogenic carcinoma (2) Carcinoma breast
(3) Ovarian carcinoma (4) Renal cell carcinoma
74. Negative prognostic factor for low grade glioma are all, except -
- (1) largest diameter of tumor > 6 cm (2) histology is astrocytoma
(3) age > 30 years (4) tumor crosses midline
75. Most common site of Epidermoid cyst in head is -
- (1) CP angle (2) Intraventricular (IV) ventricle
(3) Suprasellar (4) Parasellar
76. About acoustic schwannoma, all statements are true, except -
- (1) B/L tumor operated at the same time
(2) NF-I with café-au-lait spot may be associated
(3) Autosomal dominant
(4) Gamma knife can be an alternative
77. Which of the following tumor is associated with medically intractable seizure?
- (1) Central neurocytoma
(2) Gliomatosis cerebri
(3) Pleomorphic xanthoastrocytoma
(4) Dysembryoplastic neuroepithelial tumor

78. Tumor amenable to surgical resection and have most favourable prognosis are all, except -

- (1) Juvenile pilocytic astrocytoma
- (2) Oligodendroglioma
- (3) Ganglioglioma
- (4) Pleomorphic xanthoastrocytoma

79. Chordomas are nervous system neoplasm that have all of the following characteristics, except -

- (1) Occurrence in childhood
- (2) Location in sacrococcygeal region
- (3) Characteristic physaliphorous cells
- (4) Slow growth

80. Molecular agents inhibiting EGFR and being used to treat malignant glioma are all, except -

- (1) Imatinib Mesylate
- (2) Erlotinib
- (3) Cetuximab
- (4) Gefitinib

81. Not given in prolactinoma -

- (1) Bromocriptine
- (2) Cabergoline
- (3) Pergolide
- (4) Octreotide

82. Chemotherapy used for oligodendroglioma include all, except -

- (1) Procarbazine
- (2) Cyclophosphamide
- (3) Vincristine
- (4) Nitrosourea

83. Drugs used in Cushing disease are all, except -

- (1) Cyproheptadine
- (2) Ketoconazole
- (3) Mitotane
- (4) Bromocriptine

84. Radiosensitizing agents are all, except-

- (1) BUdR
- (2) IUdR
- (3) 5-FU
- (4) Interleukin-2

85. Regarding Neurotransmission, true statement is -
- (1) There is a single receptor identified for glutamate
 - (2) Muscarinic acetylcholine receptors are associated with a cation channel
 - (3) Ionotropic receptors are generally G-protein linked
 - (4) An inhibitory postsynaptic potential is created by increasing the membrane permeability to chloride ion
86. About staining all statements are true, except -
- (1) Osmium used in electron microscopy.
 - (2) Silver impregnation method used for showing whole of neuron.
 - (3) Marchi's method used for staining myelin.
 - (4) Eosin stains rough endoplasmic reticulum + DNA.
87. Match the incorrect mechanism of anti-cancer drug -
- (1) Nitrosourea → DNA alkylation
 - (2) Vinca alkaloid → microtubule function inhibitor
 - (3) Cisplatin → chelation via intrastrand crosslinks
 - (4) Tamoxifen → protein kinase - C inhibitor
88. About Radiotherapy in CNS tumors, all statements are true, except -
- (1) The most common external beam radiation therapy regimen for brain metastasis is 30 Gy in 10 fractions over 2 weeks.
 - (2) Most appropriate radiation protocol for glioma is 6000 cGy in 200 cGy daily fraction.
 - (3) Germinomas are very sensitive to radiotherapy.
 - (4) Cerebral PNETs are usually localized and require local radiation after surgery.
89. True about knife are all, except -
- (1) Cobalt 60
 - (2) Frameless stereotaxy for localization
 - (3) Single session is required
 - (4) Used in management of AVMs

90. Peripheral neuropathy is seen with all, except -
- (1) Stavudine
 - (2) Zidovudine
 - (3) Didanosine
 - (4) Zalcitabine
91. About Pediatric Disc Disease, all statements are true, except -
- (1) The segmental distribution of disc herniation in children is similar to that seen in adults.
 - (2) Disc herniation is most often sub-ligamental and more than 80% are posterolateral.
 - (3) 30% to 60% children with symptomatic lumbar disc herniation have direct history of trauma.
 - (4) Well managed by conservative treatment.
92. Which surgical approach for thoracic disk herniations is associated with the highest rate of neurologic injury?
- (1) Costotransversectomy
 - (2) Lateral Extracavitary
 - (3) Midline Laminectomy
 - (4) Transpedicular
93. Pain sensitive structure in vertebral body are all, except -
- (1) Periosteum
 - (2) Annulus Fibrosus
 - (3) Epidural vein
 - (4) Posterior Longitudinal Ligament
94. Site of entry for thoracic pedicle screw is best described as which one of the following?
- (1) Where the facet joint and transverse process intersect
 - (2) Where the pars interarticularis and lamina intersect
 - (3) Where the superior facet and lamina intersect
 - (4) Where the inferior facet and lamina intersect
95. A 13-year-old patient presents with bilateral spastic lower limb weakness & pain at night with gibbus, most likely diagnosis is -
- (1) Thoracic disc prolapse
 - (2) Tuberculous spine
 - (3) Ependymoma
 - (4) Neurofibroma

96. Cordotomy causes -

- | | |
|------------------------------------|------------------------------------|
| (1) C/L loss of pain only | (2) I/L loss of pain & temperature |
| (3) C/L loss of pain & temperature | (4) I/L loss of pain only |

97. Procedure for treating medically refractive pain are all, except -

- | | |
|----------------------|-----------------------------|
| (1) Cingulotomy | (2) Anterior thalamotomy |
| (3) Dorsal rhizotomy | (4) Anterolateral cordotomy |

98. True statement regarding complex regional pain syndrome or causalgia is -

- (1) The oedema and trophic changes are due to over activity of sympathetic out flow
- (2) Regional sympathetic blockade is effective for complex regional pain
- (3) Sympathetic out flow to the affected region is increased in most patients
- (4) Spread of the distribution of pain and sensory changes is common and does not implicate a psychogenic etiology

99. In the technique of percutaneous radiofrequency trigeminal gangliolysis, the needle is inserted into the -

- I Foramen rotundum
- II Trigeminal cistern
- III Foramen spinosum
- IV Foramen ovale

- | | |
|----------------|----------------------|
| (1) I, II, III | (2) I, III |
| (3) II, IV | (4) All of the above |

100. Baclofen act as -

- | | |
|--------------------------------|-----------------------------------|
| (1) agonist on GABA A receptor | (2) antagonist on GABA A receptor |
| (3) agonist on GABA B receptor | (4) antagonist on GABA B receptor |

101. Adherence of posterior communicating artery aneurysm to the temporal lobe is most likely in a patient that presents with -

- | | |
|-----------------------------|--------------------------------|
| (1) loss of consciousness | (2) seizures |
| (3) third nerve involvement | (4) no third nerve involvement |

102. Which vascular malformation has no intervening brain parenchyma between blood vessels?
- (1) Capillary telangiectasias (2) Cavernous hemangioma
(3) Cryptic AVM (4) Venous angiomas
103. Which of the following is superior anastomotic vein?
- (1) Vein of Galen (2) Vein of Labbé
(3) Vein of Trolard (4) Pre-central cerebellar vein
104. A patient received in emergency, CT scan showed SAH with acute blood intraventricularly and in septum pellucidum, probably the aneurysm to bleed is -
- (1) Anterior communicating artery (2) ICA bifurcation
(3) M2 segment (4) Posterior communicating artery
105. The venous thrombosis is most frequent during pregnancy puerperium in -
- (1) Superior sagittal sinus (2) Inferior sagittal sinus
(3) Cortical venous system (4) Transverse sinus
106. The most common site of origin of the recurrent artery of Heubner is the -
- (1) A1 segment (2) A2 segment
(3) Internal carotid artery (4) M1 segment
107. "Medusa head" appearance is seen in cerebral angiography in which malformation?
- (1) AVM (2) Cavernous angioma
(3) Venous angioma (4) Capillary telangiectasia
108. The most sensitive test for SAH is -
- (1) Lumbar puncture (2) MRI
(3) Non contrast CT (4) Cerebral angiogram
109. Terson syndrome, which occur in case of aneurysmal SAH is -
- (1) Subhyaloid hemorrhage (2) Intraretinal hemorrhage
(3) Vitreous humor hemorrhage (4) Paroxysmal headache

110. The single most common site of aneurysm presenting with SAH is -
- (1) Anterior communicating artery aneurysm
 - (2) PCOM aneurysm
 - (3) DACA aneurysm
 - (4) MCA aneurysm
111. Ophthalmic artery aneurysm result in the following visual defect, except -
- (1) Ipsilateral monocular superior nasal quadrantanopia
 - (2) Junctional scotoma
 - (3) Ipsilateral inferior nasal cut
 - (4) Bitemporal hemianopia
112. Characteristic "Popcorn" appearance seen on T2WI on MRI is seen in -
- (1) AVM
 - (2) Cavernous angioma
 - (3) Venous angioma
 - (4) Capillary telangiectasia
113. What technique would be useful during microsurgical clipping of an ophthalmic artery aneurysm?
- (1) Intradural posterior clinoidectomy
 - (2) Frontal sinus cranialization
 - (3) Anterior clinoidectomy
 - (4) Cisterna magna decompression
114. Which one of the following statements regarding Transcranial Doppler Ultrasound is least accurate?
- (1) Doppler effect is the apparent change in frequency of a wave as the source moves relative to the observer.
 - (2) Transcranial Doppler takes advantage of reflection of sound waves off blood vessels walls.
 - (3) May be useful in distinguishing vasospasm from hyperemia.
 - (4) A Lindegaard ratio (LR) of > 3 suggests vasospasm.

115. Type-II spinal Arteriovenous Malformations (AVMs) generally refer to which one of the following?
- (1) Conus medullaris AVM
 - (2) Dural Arteriovenous Fistula (AVF)
 - (3) Intradural Perimedullary AVF
 - (4) Intramedullary Glomus AVM
116. Choroid plexus is absent in all, except -
- (1) Frontal horn
 - (2) Occipital horn
 - (3) Cerebral aqueduct
 - (4) Temporal horn
117. Colpocephaly commonly seen in neonate is -
- (1) disproportionate dilatation of occipital horn
 - (2) disproportionate dilatation of frontal horn
 - (3) disproportionate dilatation of temporal horn
 - (4) disproportionate dilatation of third ventricle
118. Base of dens develop from -
- (1) Proatlas
 - (2) First occipital sclerotome
 - (3) First cervical sclerotome
 - (4) Second cervical sclerotome
119. Communicating hydrocephalus is seen in all, except -
- (1) SAH
 - (2) Arnold Chiari malformation
 - (3) Anencephaly
 - (4) Choroid plexus papilloma
120. Which of the following radiological measurement is the most sensitive for BI?
- (1) McRae line
 - (2) McGregor line
 - (3) Chamberlain line
 - (4) Wackenheimer clivus canal line
121. Secondary ossification center which appear at summit of dens between age 3-6 years fuses with rest of dens by the age of -
- (1) 10 years
 - (2) 12 years
 - (3) 14 years
 - (4) 16 years

122. Trigonocephaly result from the premature closure of -
- (1) coronal suture bilaterally
 - (2) coronal suture unilaterally
 - (3) lambdoid suture
 - (4) metopic suture
123. Two neurocentral synchondrosis on atlas fuse at about -
- (1) 4 years
 - (2) 8 years
 - (3) 9 years
 - (4) 10 years
124. Bones of skull that are formed in membrane are all, except -
- (1) Frontal
 - (2) Parietal
 - (3) Maxilla
 - (4) Occipital
125. The most common cause and site of shunt malfunction is -
- (1) obstruction distal end
 - (2) obstruction proximal end
 - (3) disconnection distal end
 - (4) disconnection proximal end
126. You are called to the emergency department to evaluate an 8 months old infant with the CT-reconstruction demonstrated. He is also exhibiting a "cock-robin" deformity. If this condition is due to Grisel's syndrome, what is the best treatment?
- (1) Surgical debridement and fusion
 - (2) NSAIDs and Philadelphia collar
 - (3) Antibiotics and Philadelphia collar
 - (4) Cervical traction
127. Which of the following embryological events occur first?
- (1) Neural tube edges meet
 - (2) Anterior neuropore closes
 - (3) Posterior neuropore closes
 - (4) Notochord develops
128. Schizencephaly is essentially a -
- (1) Demyelinating illness
 - (2) Disorder of neuronal migration
 - (3) Neurodegenerative disorder
 - (4) Psychiatric disorder
129. Fronto-orbital advancement surgery is most likely considered in which one of the following scenarios -
- (1) Apert's syndrome
 - (2) Fibrous dysplasia
 - (3) Paget's disease
 - (4) Sagittal synostosis

130. The MRI shown below demonstrates features of which one of the following conditions?



- (1) Chiari I malformation
- (2) Chiari II malformation
- (3) Chiari III malformation
- (4) Chiari IV malformation

131. Lesion of temporal lobe produce -

- (1) Anton syndrome
- (2) Balint syndrome
- (3) Disconnection syndrome
- (4) Complex partial seizure

132. "Parosmia" is for those -

- (1) who recognise and name the odour quickly
- (2) who recognise but cannot name
- (3) those for whom each odour smells the same but is distorted and unpleasant
- (4) those who can smell nothing in one or both nostrils

133. Which of the following is a positive abnormality?

- (1) Spasticity
- (2) Hemiparesis
- (3) Loss of memory
- (4) Impaired sensation

134. The telencephalon gives rise to each of the following, except -

- (1) Amygdala
- (2) Caudate nucleus
- (3) Claustrum
- (4) Globus pallidus

135. Papez circuit includes all, except -
- | | |
|---------------------------------|----------------------------|
| (1) Occipito-frontal fasciculus | (2) Fornix |
| (3) Ansa lenticularis | (4) Mamillo-thalamic tract |
136. Which of the following symptoms of Parkinson's disease is most likely to respond to a stereotactic lesion in the posterior ventral oval (VOP)/ventral intermediate (VIM) (ventrolateral) thalamus?
- | | |
|------------------|----------------------|
| (1) Bradykinesia | (2) Gait disturbance |
| (3) Rigidity | (4) Tremor |
137. Which one of the following targets is most commonly used for the treatment of dystonia?
- | | |
|-----------------|------------------|
| (1) GPi | (2) Vim thalamus |
| (3) Vo thalamus | (4) STN |
138. In Alzheimer's disease, which one of the following targets for deep brain stimulation has shown promise?
- | | |
|-----------------------------|-----------------------|
| (1) Caudate | (2) Fornix |
| (3) Globus pallidus externa | (4) Nucleus accumbens |
139. The most common cause of spasticity in children is likely to be -
- | | |
|--------------------|-----------------------------|
| (1) Cerebral palsy | (2) Multiple sclerosis |
| (3) Stroke | (4) Traumatic spinal injury |
140. Selective dorsal rhizotomy for spastic cerebral palsy works by -
- (1) Electrical stimulation of dorsal root entry zone
 - (2) Interruption of a subset of alpha-motor neurons
 - (3) Interruption of gamma-motor neurons
 - (4) Interruption of the spinal reflex arc
141. Isoelectric EEG is produced by -
- | | |
|-------------------------|------------------------------|
| (1) Morphine + Fentanyl | (2) Mepride |
| (3) Barbiturate | (4) Barbiturate + Isoflurane |

142. GABAergic neurons are present in all, except -
- (1) pars compacta of substantia nigra
 - (2) ventral tegmental area
 - (3) raphe nuclei
 - (4) superior colliculus
143. Neuropsychological testing preoperatively before epilepsy surgery is unable to -
- (1) aid lateralization of the epileptogenic zone
 - (2) predict postoperative deficits
 - (3) assess patients mental reserve capacity
 - (4) define the epileptogenic zone preoperatively
144. Which electrolyte is most affected by acid base changes?
- (1) Sodium
 - (2) Potassium
 - (3) Calcium
 - (4) Magnesium
145. A seizure arising in one motor cortex starts most frequently in any of the following, except -
- (1) Thumb
 - (2) Eyelid
 - (3) Angle of mouth
 - (4) Great toe
146. True statement about antiepileptic drug is -
- (1) Therapeutic level of phenytoin is 20 – 30 $\mu\text{g/mL}$
 - (2) At therapeutic level the elimination of phenytoin becomes zero order kinetic
 - (3) Carbamazepine can be started at high dose from starting
 - (4) Carbamazepine has more effect on cognitive function than phenytoin
147. False statement about febrile seizure is -
- (1) Febrile convulsion are the most common type of seizures
 - (2) Febrile seizure prevalence is 27%
 - (3) Risk of developing epilepsy after complex febrile seizure is 6%
 - (4) Carbamazepine and phenytoin are drug of choice
148. Uncinate seizures typically produce -
- (1) Auditory hallucinations
 - (2) Gustatory hallucinations
 - (3) Olfactory hallucinations
 - (4) Visual seizures

149. Approximately what proportion of patients with epilepsy have medically refractory seizures?
- (1) 0-20% (2) 20-40%
(3) 40-60% (4) 60-80%
150. Which one of the following is the most epileptogenic primary brain tumor?
- (1) DNET/ganglioglioma (2) Low grade glioma
(3) Meningioma (4) Metastasis
151. Which one of the following is currently seen as the best marker of severity of traumatic brain injury in survivors?
- (1) Length of coma (2) Mechanism of injury
(3) Initial CT scan (4) Post-traumatic amnesia
152. Which one of the following Karnofsky performance scores is commonly used as a cutoff for functional independence in neuro-oncology?
- (1) 50 (2) 60
(3) 70 (4) 80
153. Neurorehabilitation in the context of spinal cord injury has all the following goals, except -
- (1) Ensure that required adaptations and equipment are identified and provided
(2) Management of excretion from bowels and bladder
(3) Minimize the risk of preventable complications (e.g., pressure sores)
(4) Routine recruitment into neural stem cell transplantation trials for spinal cord injury
154. A 63-year-old male presents as a World Federation of Neurosurgical Societies (WFNS) grade III subarachnoid haemorrhage and undergoes coiling of a basilar tip aneurysm. After a prolonged Intensive Care Unit (ICU) stay, he is ready to be discharged from the ward. He is able to walk with assistance and needs help with toileting and showering. What are his modified Rankin and Glasgow Outcome Scale scores respectively?
- (1) mRS 2 and GOS 3
(2) mRS 3 and GOS 2
(3) mRS 3 and GOS 3
(4) mRS 4 and GOS 3

155. Not a modality of Rx for pan brachial plexus injury-
- (1) Neurolysis
 - (2) Spinal cord stimulation
 - (3) Division of nerve
 - (4) Stellate ganglion block
156. When compared with open TLIF, MIS-TLIF is associated with -
- (1) shorter hospital stay
 - (2) lower rates of fusion
 - (3) higher complication rates
 - (4) worse long-term outcomes
157. What donor nerve is commonly used to reinnervate the brachialis muscle and help reanimate flexion of the elbow?
- (1) Musculocutaneous nerve
 - (2) Ulnar nerve
 - (3) Axillary nerve
 - (4) Radial nerve
158. The transforaminal approach to the disc space utilizes the Kambin's triangle. Which of these anatomical structures does not form a boundary of this triangle?
- (1) Exiting nerve root
 - (2) Superior border of the caudal vertebra
 - (3) Superior articulating facet
 - (4) Dura
159. Which is the most significant benefit of percutaneous Transforaminal Lumbar Interbody Fusion (TLIF) vs open Posterior Lumbar Interbody Fusion (PLIF)?
- (1) Preservation of the paraspinal muscle sleeve
 - (2) Higher fusion rate
 - (3) More measurable intraoperative blood loss
 - (4) Improved ability to evacuate the disk space
160. Brainstem death -
- (1) can be diagnosed in a spontaneously ventilating patient.
 - (2) can be diagnosed by any consultant acting alone.
 - (3) is impossible to diagnose in a sedated patient.
 - (4) is confirmed after one set of 'brain-stem tests'.

161. The most common muscle involved in the peroneal nerve palsy is -
- (1) EDL (2) Peroneus longus
(3) Tibialis anterior (4) EHL
162. Tarsal Tunnel Syndrome involves the following nerve -
- (1) anterior tibial nerve (2) posterior tibial nerve
(3) common peroneal nerve (4) musculocutaneous nerve of leg
163. The thoracodorsal nerve arises from what region of the brachial plexus?
- (1) Upper trunk (2) Posterior cord
(3) Lateral cord (4) Medial cord
164. What MRI finding is most consistent with nerve root avulsion in a patient who was involved in a motorcycle accident who present with a flail arm?
- (1) Perineural edema (2) Neuroma-in-continuity
(3) Pseudomeningoceles (4) Coexistent vascular injury
165. Weakness of the deltoid muscle is caused by injury to the -
- (1) Axillary nerve (2) Dorsal scapular nerve
(3) Musculocutaneous nerve (4) Suprascapular nerve
166. Ophthalmic artery in Relation to optic nerve is -
- (1) Superomedial (2) Inferomedial
(3) Superolateral (4) Inferolateral
167. The vein of Galen is present in -
- (1) Quadrigeminal cistern (2) Ambient cistern
(3) Suprasellar cistern (4) Interpeduncular cistern
168. Descending fibers of the Medial Longitudinal Fasciculus (MLF) arise from all of the following structures, except -
- (1) Inferior colliculus (2) Cajal interstitial nucleus
(3) Pontine reticular formation (4) Superior colliculus

169. The membrane of Lilliequist separates which of the following subarachnoid cisterns?
- (1) Ambient cistern and crural cistern
 - (2) Ambient cistern and quadrigeminal cistern
 - (3) Interpeduncular and chiasmatic cistern
 - (4) Interpeduncular and prepontine cistern
170. The anterior choroidal artery supplies portions of each of the following structures, except the-
- (1) amygdala
 - (2) hippocampus
 - (3) hypothalamus
 - (4) internal capsule
171. Which one of the following statements regarding image-guided neurosurgery in pediatric patients is most accurate?
- (1) Optical frameless stereotactic navigation is ideal for children with unfused skull sutures.
 - (2) Electromagnetic frameless stereotactic navigation is more appropriate for neuro-endoscopy in children.
 - (3) Reference array for electromagnetic navigation must be fixed to bone.
 - (4) Electromagnetic navigation requires a clear visual line of sight between the tracker and the stylet.
172. All of the following are true about growing skull fracture, except -
- (1) can cross suture line
 - (2) may be associated with underlying dura injury
 - (3) most common in frontoparietal region
 - (4) most common in the 3 to 5 years age group
173. True statement about Multiple Sclerosis (MS) -
- (1) Two lesions at the same site are diagnostic of MS.
 - (2) In CSF IgM is raised.
 - (3) Associated with retrobulbar neuritis and blindness.
 - (4) Trigeminal neuralgia can be present in MS.

174. In Foville syndrome, all are true, except -
- (1) VIIth nerve paresis
 - (2) Ipsilateral paralysis of conjugate gaze
 - (3) Contralateral corticospinal hemiplegia
 - (4) Bilateral paralysis of conjugate gaze
175. Corpus Callosotomy is most effective for which form of Epilepsy?
- (1) Atonic
 - (2) GTC (Generalized Tonic Clonic)
 - (3) SPE (Simple Partial Epilepsy)
 - (4) CPE (Complex Partial Epilepsy)
176. Which one of the following Least accurately describes, how surgeons interact with currently available surgical robots?
- (1) Master-slave
 - (2) Supervisory controlled
 - (3) Shared control
 - (4) Augmented reality
177. The blood-brain barrier is made up of what structures?
- (1) Astrocytic foot process
 - (2) Endothelial tight junctions
 - (3) Ependymal gap junctions
 - (4) Glial membrane
178. Pregnancy is most likely to affect the symptoms in a patient with what tumor type?
- (1) Glioblastoma
 - (2) Ependymoma
 - (3) Meningioma
 - (4) Lung metastases

179. MRI is CI in all except (CI = contraindicated) -

- (1) Pregnancy
- (2) Cervical cord lesion with respiratory involvement
- (3) Patients with pacemaker
- (4) Intracranial ferromagnetic aneurysm clip

180. The power of a study is best described as which one of the following?

- (1) The probability of a significant finding
- (2) The probability of correctly rejecting the null hypothesis
- (3) The probability of needing further data at the end of the study period
- (4) The probability of accepting the null hypothesis

Space for Rough Work / रफ कार्य के लिए जगह